



FIG. 1

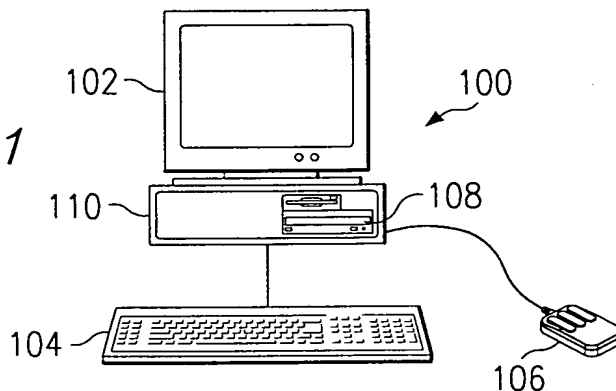


FIG. 2

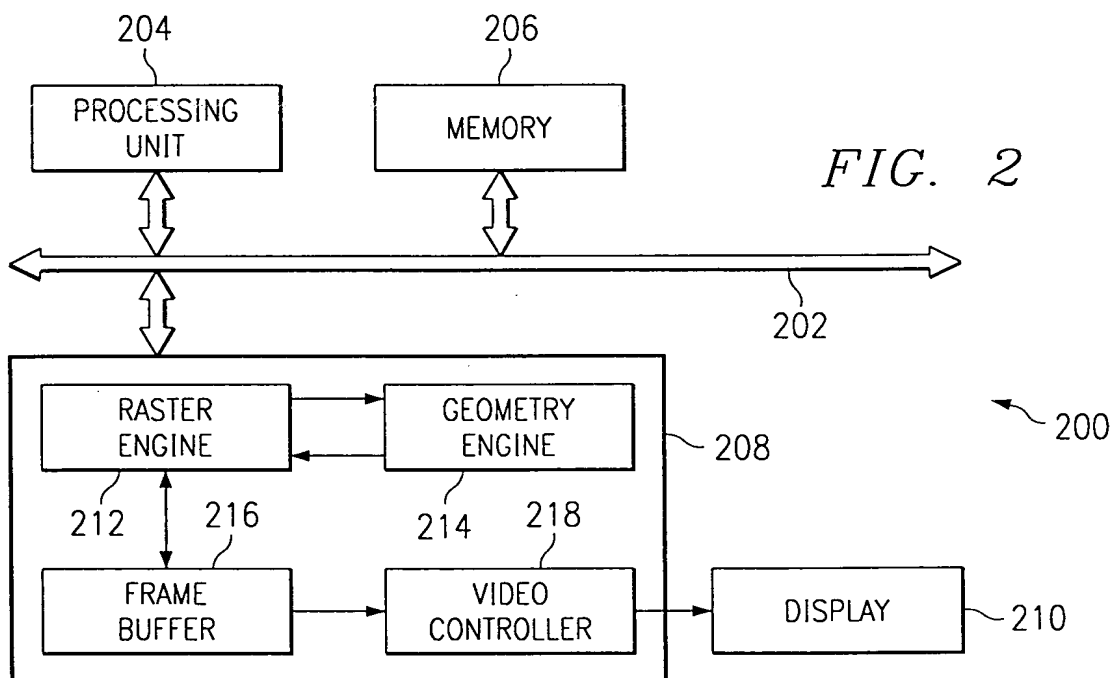
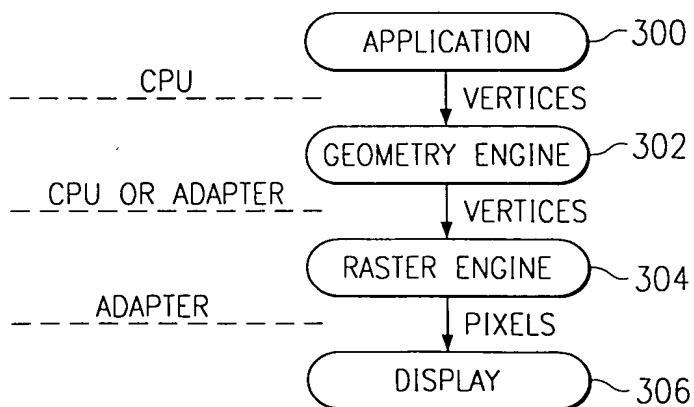
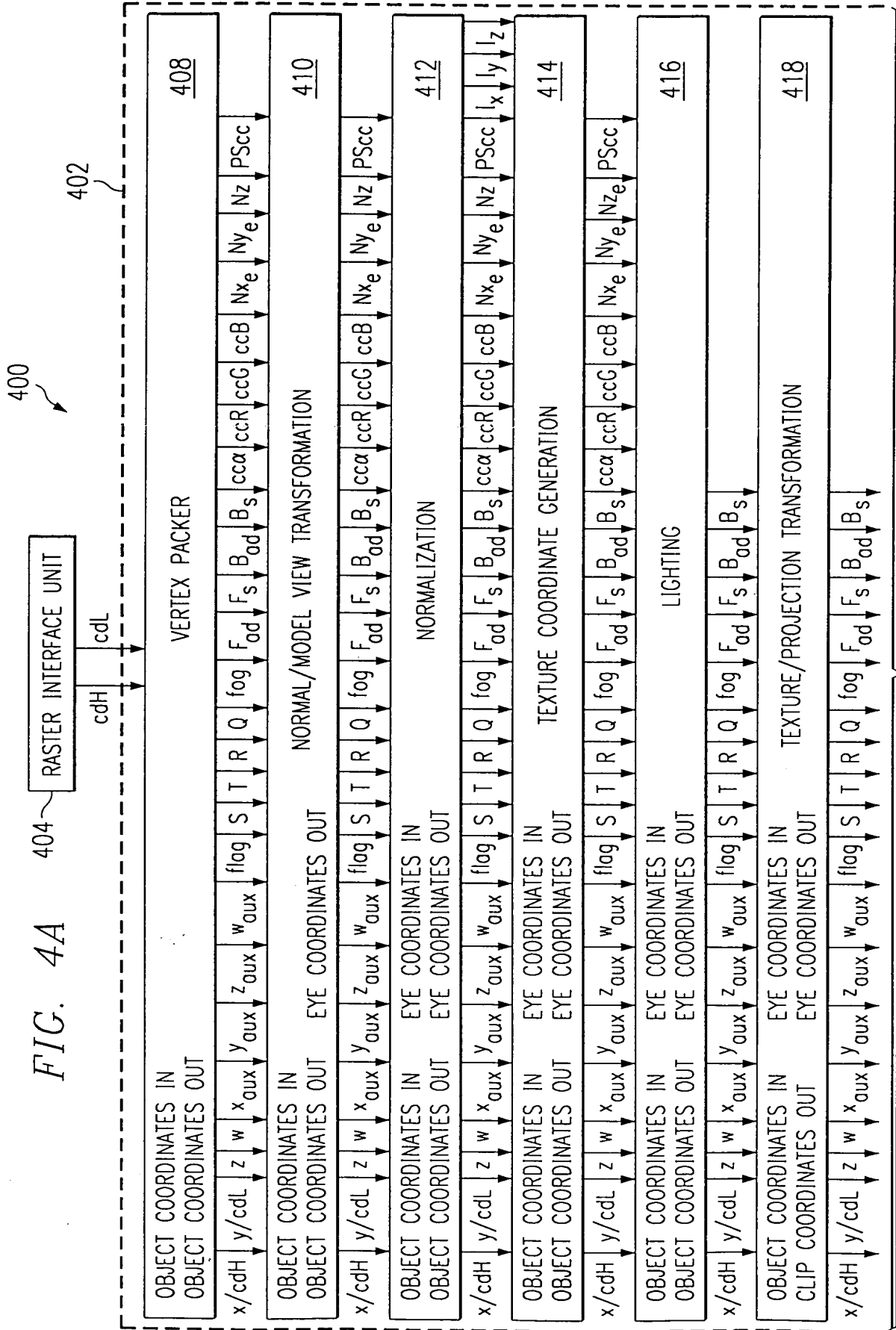


FIG. 3







FROM FIG. 4A

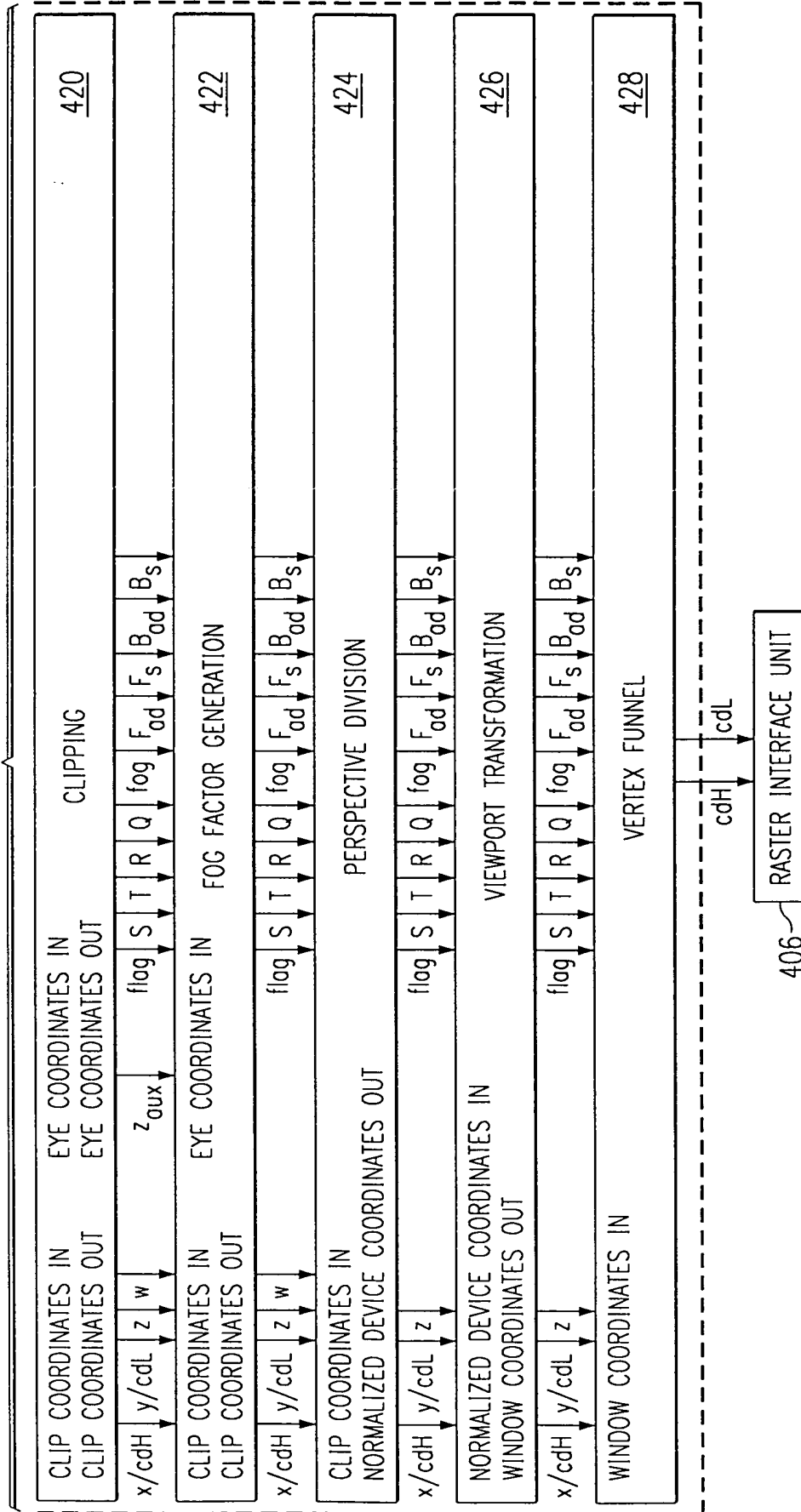


FIG. 4B



FIG. 5

502 FRAGMENT	504 AS USED IN GEOMETRY	506 AS USED IN RASTER
x, y, z, w	PRIMARY COORDINATE ¹	SCREEN COORDINATE
xAux, yAux, zAux, wAux	EYE COORDINATE ²	n/a
s, t, r, q	TEXTURE COORDINATE	TEXTURE COORDINATE
fog	FOG FACTOR	FOG FACTOR
f _{ad} , f _s	n/a	FRONT AMBIENT/DIFFUSE COLOR, FRONT SPECULAR COLOR
b _{ad} , b _s	n/a	BACK AMBIENT/DIFFUSE COLOR, BACK SPECULAR COLOR
cc _a , cc _r , cc _g , cc _b	CURRENT COLOR (ALPHA, RED, GREEN, BLUE)	n/a
n _x , n _y , n _z	NORMAL VECTOR	n/a
PScc	SECONDARY CURRENT COLOR (PACKED ALPHA, RED, GREEN, BLUE)	n/a
i _x , i _y , i _z	NORMALIZED EYE COORDINATE ³	n/a

500

FIG. 6

602 STAGE	604 FRAGMENTS AFFECTED	606 ASSOCIATED COMMAND
NORMAL/MODEL VIEW TRANSFORMATION	xAux, yAux, zAux, wAux n _x , n _y , n _z	ENABLE_NORMALXF ENABLE_MDLVXF
NORMALIZATION	n _x , n _y , n _z i _x , i _y , i _z	ENABLE_NORMALIZEN ENABLE_TCGSPHERE
TEXTURE COORDINATE GENERATION	s, t, r, q	ENABLE_TCG
LIGHTING	f _{ad} , f _s , b _{ad} , b _s	
TEXTURE/PROJECTION TRANSFORMATION	x, y, z, w s, t, r, q	ENABLE_TEXTUREXF ENABLE_PROJECTXF
CLIPPING	all	ENABLE_CLIPPING
FOG FACTOR GENERATION	fog	ENABLE_FOG
PERSPECTIVE DIVISION	x, y, z s, t, r, q	ENABLE_PERSDIV ENABLE_TEXPERSDIV
VIEWPORT TRANSFORMATION	x, y, z	ENABLE_VIEWPORTXF

600

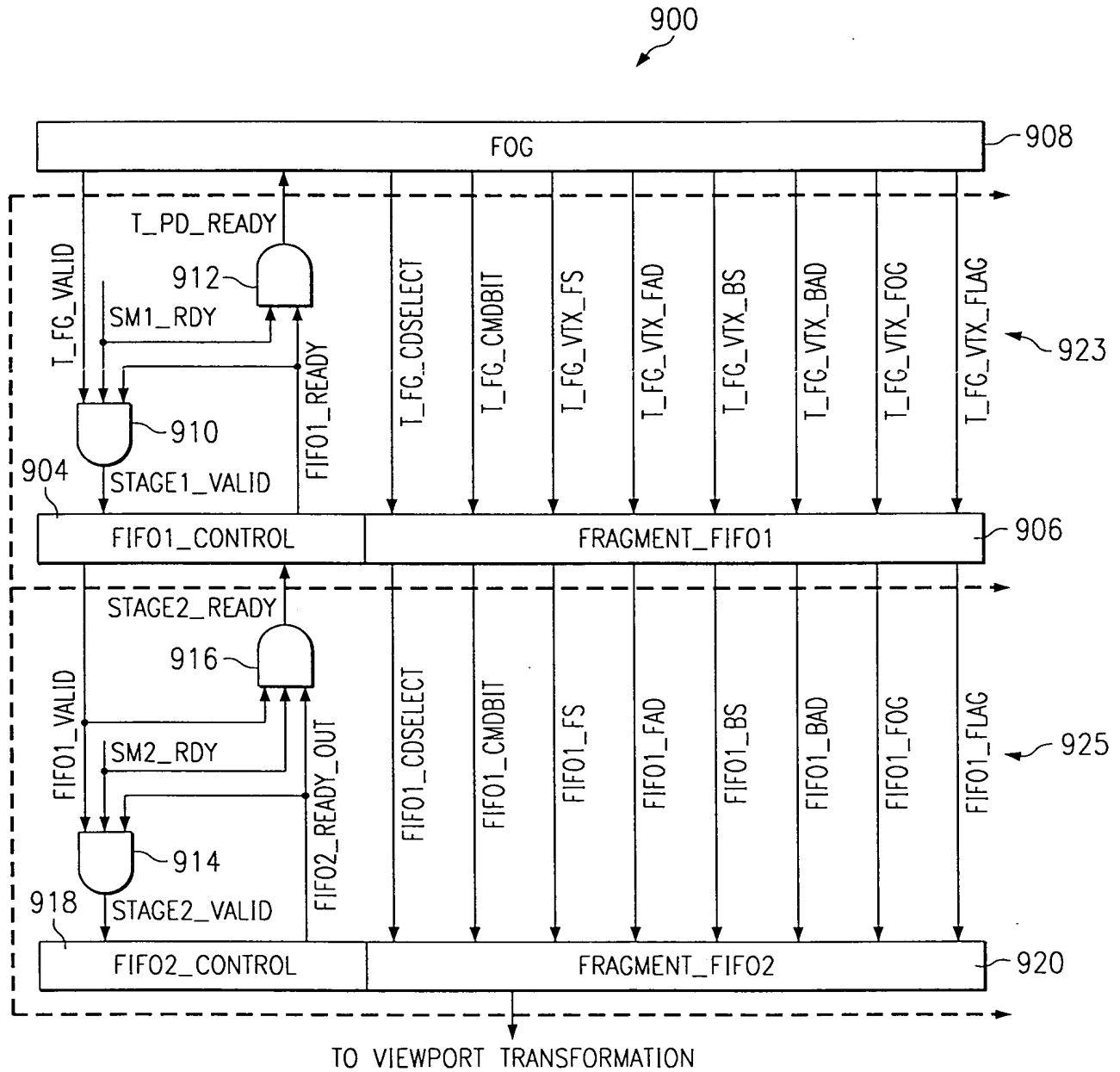


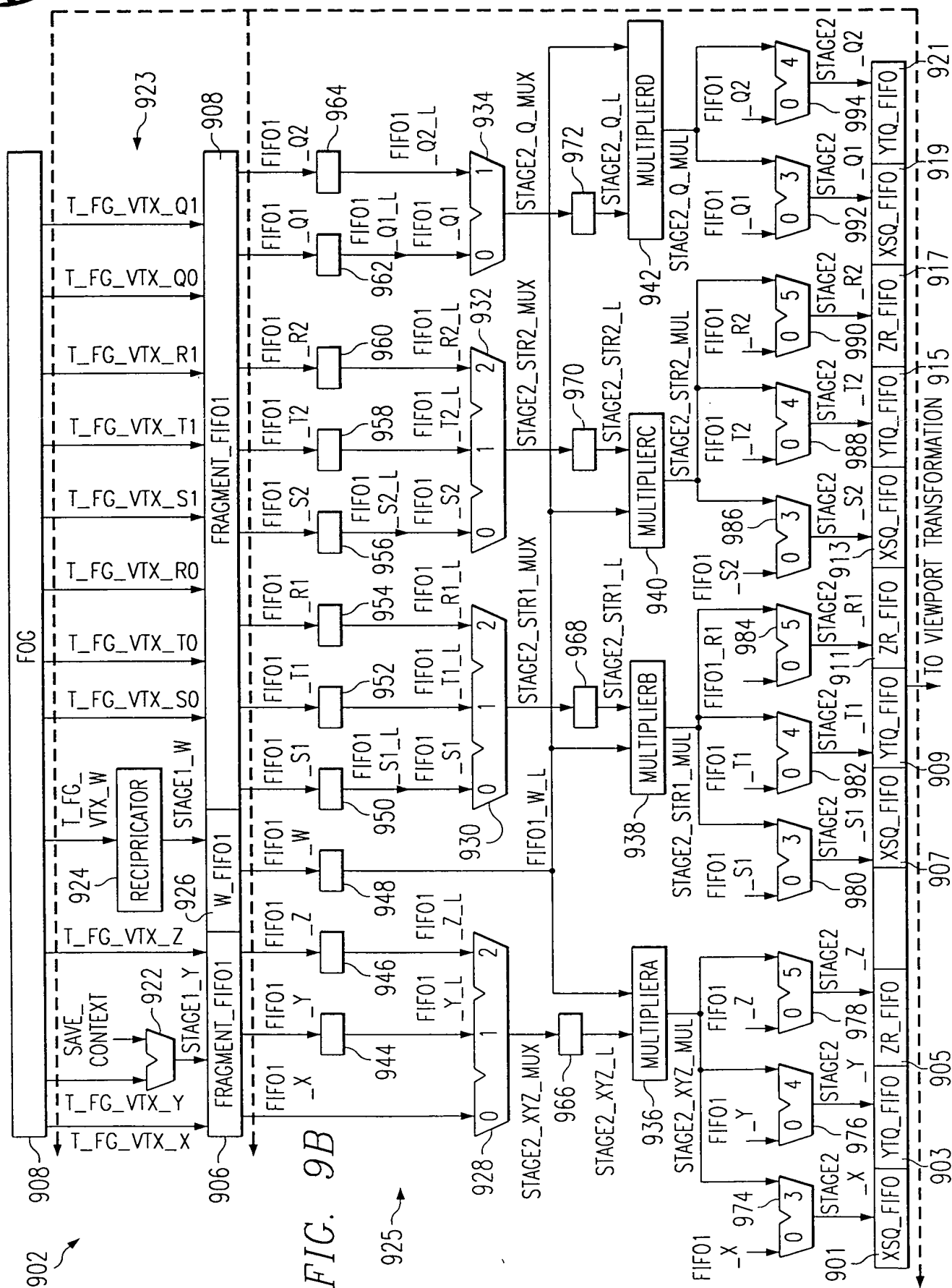
702 STAGE	700 FRAGMENTS REQUIRED	704
NORMAL/MODEL VIEW TRANSFORMATION	$x, y, z, w, n_x, n_y, n_z$	
NORMALIZATION	$x_{Aux}, y_{Aux}, z_{Aux}, w_{Aux}, n_x, n_y, n_z$	
TEXTURE COORDINATE GENERATION	$x, y, z, w, x_{Aux}, y_{Aux}, z_{Aux}, w_{Aux}, i_x, i_y, i_z$	
LIGHTING	$n_x, n_y, n_z, cc_o, cc_r, cc_g, cc_b, P_{Sc}, f_{ad}, f_s, b_{ad}, b_s$	
TEXTURE/PROJECTION TRANSFORMATION	$x_{Aux}, y_{Aux}, z_{Aux}, w_{Aux}, s, t, r, q$	
CLIPPING	all	
FOG FACTOR GENERATION	z_{Aux}	
PERSPECTIVE DIVISION	x, y, z, w, s, t, r, q	
VIEWPORT TRANSFORMATION	x, y, z	

FIG. 7

802 SIGNAL	804 NO TRANSFER	806 NO TRANSFER	808 COMMAND	810 DATA	812 VERTEX
VALID	0	x	1	1	1
READY	x	0	1	1	1
cmdBit	x	x	1	0	x
cdSelect ¹	x	x	1	1	0

FIG. 8







1000

INCOMING COORDINATE	X	Y	Z	W	S0	T0	R0	Q0	S1	T1	R1	Q1
OUTGOING COORDINATE	X/W	Y/W	Z/W		S0/W	T0/W	R0/W	Q0/W	S1/W	T1/W	R1/W	Q1/

FIG. 10

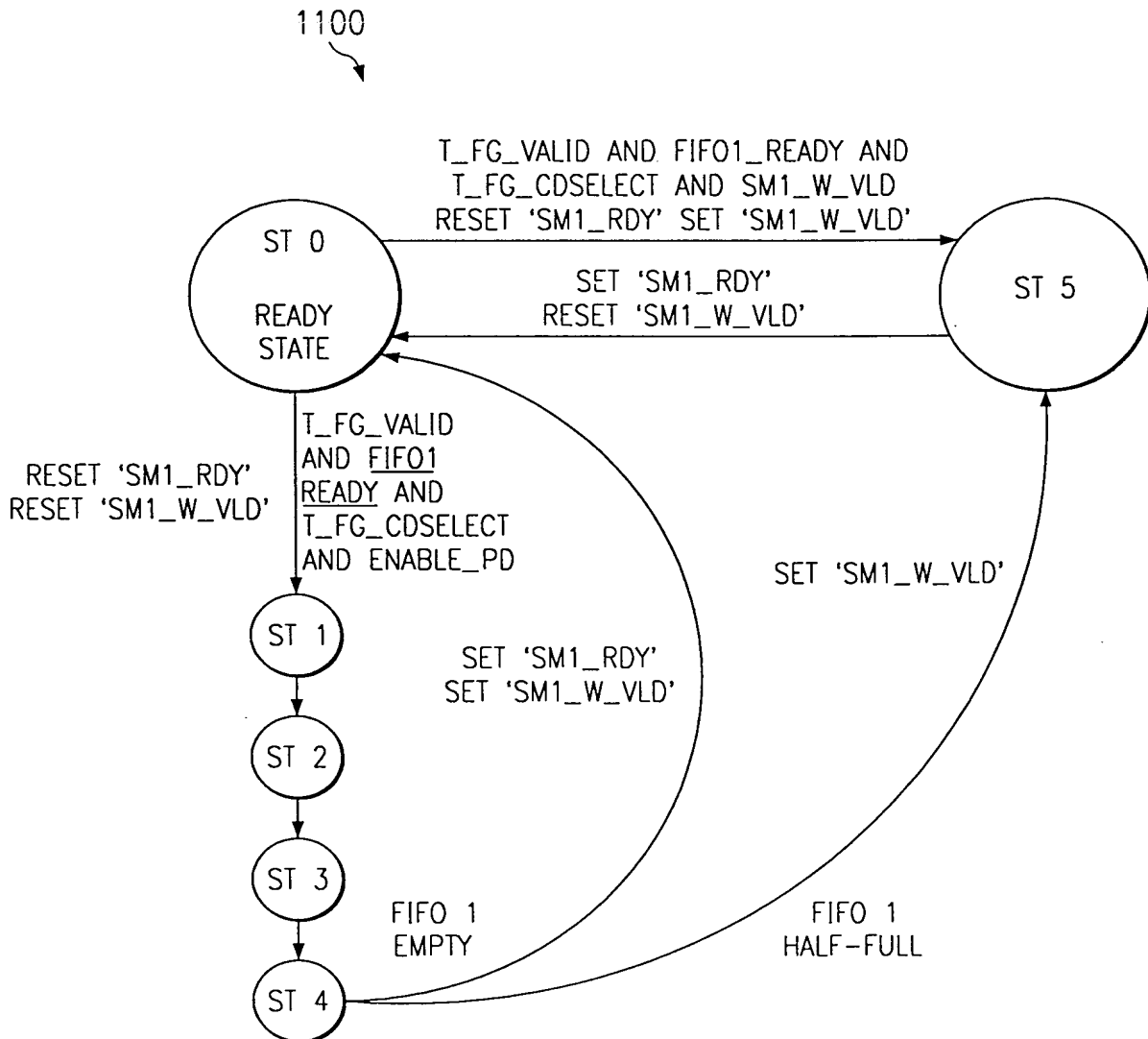


FIG. 11

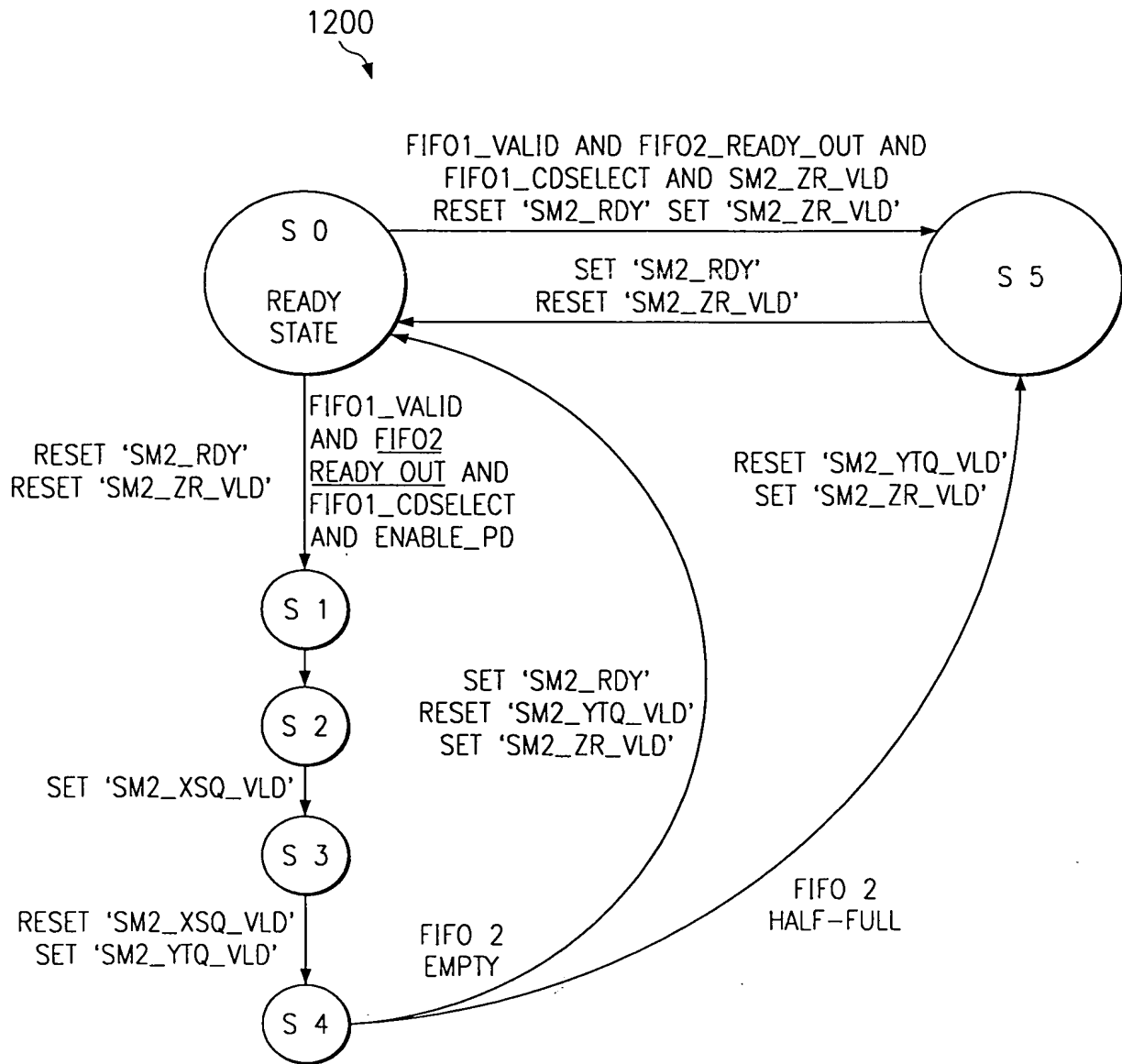


FIG. 12



1302

FIG. 13

1300

CLOCK	0	1	2	3	4	5	6	7	8	9	10	11
1/W	W ₁					W ₂					W ₃	
FIFO I						I/W					I/W	
MUL A								X/W	Y/W	Z/W		
									X/W	Y/W	Z/W	
MUL B								S1/W	T1/W	R1/W		
									S1/W	T1/W	R1/W	
MUL C								S2/W	T2/W	R2/W		
									S2/W	T2/W	R2/W	
MUL D								Q1/W	Q2/W			
									Q1/W	Q2/W		
FIFO II												X/W Y/W Z/W S1/W T1/W R1/W Q1/W S2/W T2/W R2/W Q2/W